



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,257	10/30/2003	William W. Cheng	03T004	2940
7590	11/16/2004		EXAMINER	
David T. Yang, Esq. Morrison & Foerster LLP Suite 3500 555 est Fifth Street Los Angeles, CA 90013-1024			WELLS, KENNETH B	
			ART UNIT	PAPER NUMBER
			2816	
DATE MAILED: 11/16/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/698,257	CHENG ET AL.
Examiner	Art Unit	
Kenneth B. Wells	2816	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 30 October 2003.

2a)  This action is FINAL.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)  Claim(s) 1-40 is/are pending in the application.  
4a) Of the above claim(s) 23-27 is/are withdrawn from consideration.  
5)  Claim(s) \_\_\_\_\_ is/are allowed.  
6)  Claim(s) 1-22 and 28-40 is/are rejected.  
7)  Claim(s) \_\_\_\_\_ is/are objected to.  
8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date .  
4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_ .  
5)  Notice of Informal Patent Application (PTO-152)  
6)  Other: \_\_\_\_\_

Art Unit: 2816

1. Applicant's election of Group I, claims 1-22 and 28-40 is acknowledged. Claims 23-27 are therefore withdrawn from consideration by the examiner.

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

3. Claims 1-22 and 28-40 are objected to because of the following informalities: in claim 8, it is improper to recite "voltage source VREF4", i.e., this should be changed to --voltage potential VREF4--. Note the same problem in claims 10, 11 and 18. In claim 9, it appears that "impedance" should be changed to --voltage level-- because VREF4 is a voltage, not a voltage source. The claims are also objected to because the references to Q1, Q2, etc should be deleted (because it is not clear, for example, if claim 1 requires a BJT such as in applicant's figures, or any transistor, including a FET). Appropriate correction is required.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 2816

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-9, 12-16, 19, 22 and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Baskett.

Note Fig. 1, where the recited differential pair of transistors reads on BJTs 20 and 22; the recited pair of cascode transistors reads on BJTs 12 and 14; and the recited means for maintaining the cascode transistors in an on state regardless of the states of the differential pair of transistors reads on BJTs 16 and 18 and their emitter resistors. As to claim 5, the currents through BJTs 16 and 18 will be approximately equal since the transistor sizes of BJTs 16 and 18 are (implied to be) equal. The first and second outputs of claim 7 are Q and /Q, and the common voltage source (potential) of claim 8 is VREF1. The third current source of claim 12 is BJT 24. As to claim 13, note column 1, lines 52+. The second means of claims 14 and 19 is the (unillustrated) driver circuitry that provides signals D and D/.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2816

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baskett in view of any one of Spratt, Whitfield and Hunley et al.

The use of a reference potential generator having a current source and Schottky diode, though not disclosed, nevertheless would have been obvious to those having ordinary skill in the art, because such reference potential generator circuits are old and well-known in the art (as shown by the three secondary references, and have old and well-known benefits in the art (thus providing the motivation for the skilled artisan to use such a reference potential generator for providing VREF1 in Baskett). One such benefit is the provision of a stable bias voltage against temperature fluctuations.

6. Claims 17, 18, 28-30 and 33-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baskett in view of applicant's admitted prior art.

As to claims 17 and 18, the recited current source (BJT Q5 in combination with circuit 20 in instant Fig. 3) also would

Art Unit: 2816

have been obvious to those having ordinary skill in the art because it is also an old and well-known way of providing a current source for a differential amplifier, and is admitted to be well-known by applicant (see instant Fig. 1). Thus, claims 17 and 18 do not patentably distinguish over Baskett.

As to claims 28-30, these claims recite the same limitations as claims 1-22, except in a D/A converter having plural switches, each with the details of claims 1-22. Applicant admits on page 2 of the instant specification that it is known in the art to selectively switch plural current sources into or out of a current summing device. Using the Baskett Fig. 1 logic circuit as such a switch would have been obvious to those having ordinary skill in the art, the motivation for using the same Fig. 1 logic circuit as the driver stage being to obtain the benefits taught by Baskett, i.e., to obtain the advantage of reduced switching delays associated with the Fig. 1 circuit, see column 1, lines 40-45 of Baskett.

As to claims 33 and 34, note the above rejection of claims 17 and 18.

As to claims 35-37, note the above rejection of claims 5, 13 and 19.

Art Unit: 2816

7. Claims 20, 21, 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baskett.

Though not disclosed by Baskett, the use of another Fig. 1 circuit as a driver circuit for providing the signals D and D/ would have been obvious as well because the skilled artisan will easily recognize that the Fig. 1 logic circuit of Baskett can be cascaded together (output-to-input). The motivation for using the same Fig. 1 logic circuit as the driver stage is to obtain the benefits taught by Baskett, i.e., to obtain the advantage of reduced switching delays associated with the Fig. 1 circuit, see column 1, lines 40-45 of Baskett.

8. Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baskett in view of applicant's admitted prior art and further in view of any one of Spratt, Whitfield and Hunley et al.

Note the above rejection of claims 10 and 11 as to the obviousness of using a Schottky diode-type reference generator circuit.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Art Unit: 2816

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth B. Wells whose telephone number is (571)272-1757. The examiner can normally be reached on Monday through Friday from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan, can be reached at (571)272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Kenneth B. Wells*  
Kenneth B. Wells  
Primary Examiner  
Art Unit 2816

November 12, 2004